f) identifying the distance value associated, in the previous calibration step, [to] with the value of said comparison signal obtained in step d); and

g) associating the distance value identified in step (f) [to] with the comparison signal obtained in step d).

16. Method for measuring the distance of an object from a measuring device, comprising the following steps:

a) emitting a signal, wherein the emitted signal is a light beam adapted to illuminate the object along an emission optical path and said emitting step includes carrying out at least one scan on the object along at least one scanning line;

b) directing the signal towards an object;

c) detecting the signal diffused by the object, wherein the detected signal is an analogue electric signal proportional to the luminous image diffused by the object along a receiving optical path, wherein the analogue electric signal is representative of the luminous image diffused by the object along the scanning line,

d) carrying out a sampling of the analogue electric signal at a prefixed sampling frequency so as to extract at least one sample x_k representative of at least one point of the scanning line and converting the sampled analogue signal into digital signal so as to obtain a numerical value of said at least one sample x_k;

e) comparing the detected signal with the emitted signal so as to obtain a comparison signal representing the distance traveled by the emitted signal and the object diffused signal;

f) wherein, prior to step a) there is a measuring device calibration step so as to associate a numerical value and a prefixed distance value with a prefixed comparison signal value;

g) identifying the distance value which, in the previous calibration step, had been associated to said numerical value and to said sample x_k;

h) associating the distance value identified in step g) to the numerical value obtained in step d); and

i) storing the distance value obtained for sample x_k in step h) and iteratively repeating the previous steps starting from step d) for each further sample x_{k+1}, wherein k=1, . . , N.

17. Method for measuring the distance of an object from a measuring device, comprising the following steps:

a) emitting a signal, wherein the emitted signal is a light beam adapted to illuminate the object along an emission optical path and said emitting step includes carrying out at least one scan on the object along at least one scanning line;

b) directing the signal towards an object;

c) detecting the signal diffused by the object, wherein the detected signal is an analogue electric signal proportional to the luminous image diffused by the object along a receiving optical path, wherein the analogue electric signal is representative of the luminous image diffused by the object along the scanning line,

d) carrying out a sampling of the analogue electric signal at a prefixed sampling frequency so as to extract at least one sample x_k representative of at least one point of the scanning line and converting the sampled analogue signal into digital signal so as to obtain a numerical value of said at least one sample x_k;

e) comparing the detected signal with the emitted signal so as to obtain a comparison signal representing the distance traveled by the emitted signal and the object diffused signal;

a 2 f) wherein, prior to step a) there is a measuring device calibration step so as to associate a numerical value and a prefixed distance value with a prefixed comparison signal value;

Cont.

g) identifying the distance value which, in the previous calibration step, had been associated to said numerical value and to said sample x_k; and

h) associating the distance value identified in step g) to the numerical value obtained in step d);

wherein the calibration step comprises the following steps:

carrying out at least one scan along a scanning line on a surface of known reflectance placed at a prefixed distance;

acquiring an analogue electric signal representative of the reflectance of said surface along the scanning line;

carrying out a sampling of the acquired analogue signal, at a sampling frequency equal to the one prefixed, so as to extract at least one sample x_j representative of at least one point on the scanning line;

converting the sampled analogue signal into digital signal so as to obtain a numerical value for said at least one sample x_j;

associating to said numerical value obtained for said at last one sample x_j the prefixed distance value at which the surface of known reflectance has been placed, and iteratively repeating the previous steps for a prefixed number of times, each time moving the surface of known reflectance by a prefixed distance interval.

Cont.

- 18. Method for measuring the distance of an object from a measuring device, comprising the following steps:

a) emitting a signal, wherein the emitted signal is a light beam adapted to illuminate the object along an emission optical path and said emitting step includes carrying out at least one scan on the object along at least one scanning line;

b) directing the signal towards an object;

c) detecting the signal diffused by the object, wherein the detected signal is an analogue electric signal proportional to the luminous image diffused by the object along a receiving optical path, wherein the analogue electric signal is representative of the luminous image diffused by the object along the scanning line,

d) carrying out a sampling of the analogue electric signal at a prefixed sampling frequency so as to extract at least one sample x_k representative of at least one point of the scanning line and converting the sampled analogue signal into digital signal so as to obtain a numerical value of said at least one sample x_k;

e) comparing the detected signal with the emitted signal so as to obtain a comparison signal representing the distance traveled by the emitted signal and the object diffused signal;

f) wherein, prior to step a) there is a measuring device calibration step so as to associate a numerical value and a prefixed distance value with a prefixed comparison signal value;

g) identifying the distance value which, in the previous calibration step, had been associated to said numerical value and to said sample x_k; and

h) associating the distance value identified in step g) to the numerical value obtained in step d);

wherein the calibration step comprises the following steps:

carrying out at least one scan along a scanning line on a surface of known reflectance placed at a prefixed distance;

acquiring an analogue electric signal representative of the reflectance of said surface along the scanning line;

carrying out a sampling of the acquired analogue signal, at a sampling frequency equal to the one prefixed, so as to extract at least one sample x_j representative of at least one point on the scanning line;

converting the sampled analogue signal into digital signal so as to obtain a numerical value for said at least one sample x_j;

associating to said numerical value obtained for said at last one sample x_j the prefixed distance value at which the surface of known reflectance has been placed, and iteratively repeating the previous steps for a prefixed number of times, each time moving the surface of known reflectance by a prefixed distance interval.

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wherein the calibration step also comprises the step of filling with the distance values associated to the numerical values obtained for the samples x_j, the items of a calibration matrix having, as index of column j a number from zero to the number of samples x_j extracted, and as index of row i, a number from zero to the maximum value of the numerical value obtained after the analogue to digital conversion of the signal, where filling the empty items (i, j) of the matrix comprises the step of identifying, column by column, the empty items (i, j) of the matrix and filling each of these empty items with a